DIN EN 17197:2024-05 (E)

Construction products: Assessment of release of dangerous substances - Analysis of inorganic substances in eluates and digests - Analysis by inductively coupled plasma optical emission spectrometry (ICP-OES)

Contents

Page

European foreword 4

Introduction 5

1 Scope 6

2 Normative references 6

3 Terms and definitions 6

4 Abbreviations 8

5 Principle 9

6 Interferences 9
6.1 General 9
6.2 Spectral interferences 9
6.2.1 Background emission and stray light 9
6.2.2 Spectral overlaps 10
6.3 Non-spectral interferences 10
6.3.1 Physical interferences 10
6.3.2 Chemical interferences 10
6.3.3 Memory interferences 10

7 Reagents 10

8 Apparatus 12

9 Procedure 13
9.1 Test sample 13
9.2 Test portion 13
9.3 Instrument set up 13
9.3.1 General requirements 13
9.3.2 Inter-element correction 14
9.3.3 Internal standard 14
9.3.4 Instrument performance check 14
9.4 Calibration 14
9.4.1 Linear calibration function 14
9.4.2 Nonlinear calibration function 15
9.4.3 Standard addition calibration 15
9.5 Sample measurement 15

10 Calculation 16
10.1 Calculation for digests of construction products 16
10.2 Calculation for eluates of construction products 16

11 Expression of results 16

12 Performance characteristics 16

12.1 General ... 16
12.2 Blank ... 16
12.3 Calibration check ... 16
12.4 Interference ... 16
12.5 Recovery ... 17
12.6 Indicative values for MDL ... 17

13 Test performance ... 17

14 Test report ... 18

Annex A (informative) Wavelengths, spectral interferences and estimated method detection limits 19

Annex B (informative) Indicative values for MDL ... 23

Annex C (informative) Validation results for analysis of inorganic substances in digest and eluates from construction products ... 24

C.1 General ... 24
C.2 Precision data for analysis of eluates from construction products ... 24
C.3 Precision data for analysis of aqua regia digests from construction products ... 31

Annex D (informative) Inter element correction (IEC) ... 38

Annex E (normative) Determination of arsenic, antimony, mercury and selenium using chemical vapour generation ICP-OES ... 40

E.1 Scope ... 40
E.2 Principle ... 40
E.3 Apparatus ... 40
E.4 Reagents ... 41
E.5 Procedure ... 42
E.6 Calculation ... 43

Bibliography ... 44